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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/479,262 01/05/00 YAMAZAKI

S SEL-154

EXAMINER

MMC2/0621

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ART UNIT

PAPER NUMBER

2815

DATE MAILED:

06/21/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/479,262

Applicant(s)

Yamazaki

Examiner

Edward Wojciechowicz

Art Unit

2815



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 1-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The exact structure and process of the claimed invention is not clearly defined. In claims 1, 7, what is the complete structure of the gate insulating film? Does this film include any other layers? Claims 4-6, 10-12, 16-18, 22-24, are vague as to the types of devices recited. How is the claimed device of the independent claim from which they depend formed within these other recited devices?

In claims 13, 19, and 25-31 what is the functioning and operable device that is being claimed? These claims appear incomplete both as to the device structure and the recited method.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-31 are further rejected, insofar as understood, under 35 U.S.C. 103(a) as being unpatentable over Wu, and further in view of Kobayashi. Applicant's inventive concept appears to

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reside in the formation of an FET gate dielectric layer which is comprised of a silicon-oxynitride layer which is doped with boron. This inventive structure appears to be disclosed by Wu which shows a gate dielectric layer which may be comprised of an oxynitride composition which, in turn, may be doped with boron. See, for example, the discussion at col. 4, l.42-col.5, l. 1-30.

Kobayashi also shows a FET structure wherein the gate dielectric may be formed of an oxynitride layer which is also doped with boron. This structure is disclosed in Kobayashi's discussion of the prior art in columns 4 and 5, and essentially describes an oxynitride dielectric layer that would inadvertently end up with boron impurities implanted therein.

The boron concentrations discussed in these references would also appear to be within the order of those claimed by applicant.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward Wojciechowicz, whose telephone number is (703) 308-4898.

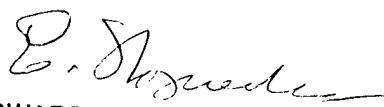
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Edward Wojciechowicz:ew

June 18, 2001


EDWARD WOJCIECHOWICZ
PRIMARY EXAMINER
GROUP 2500